



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/819,816 | 03/29/2001 | Tsutomu Arai | 019519-303 | 1449 |

7590 04/22/2004

Platon N. Mandros
BURNS, DOANE, SWECKER & MATHIS, L.L.P.
P.O. Box 1404
Alexandria, VA 22313-1404

EXAMINER

AHMED, SHEEBA

ART UNIT PAPER NUMBER

1773

DATE MAILED: 04/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/819,816

Applicant(s)

ARAI ET AL.

Examiner

Sheeba Ahmed

Art Unit

1773

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19-27 is/are rejected.
- 7) ☒ Claim(s) 28-32 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Claim 27 has been amended in the above-identified application. New claims 28-32 have been added. **Claims 19-32 are now pending.**

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 19-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murata et al. (US 6,074,741) in view of Suga et al. (US 5,853,801).

Murata et al. disclose an antiglare material, suitable for use in liquid crystal displays, comprising a transparent substrate provided with a surface layer on one or both sides and is formed from a UV curing resin containing at least an epoxy compound and beads of resin having a particle size of 0.5 to 6 microns (Column 3, lines 1-10). The resin beads may be formed of crosslinked acrylic resin wherein methyl methacrylate is preferred (Column 7, lines 33-43). The thickness of the surface layer is 1 to 5 microns (Column 8, lines 36-38).

Murata et al. do not specifically state that the surface their surface layer is subjected to rubbing.

However, Suga et al. disclosed a process for the preparation of an optical compensatory sheet, which improves the image contrast and viewing angle of a liquid crystal display (Column 1, lines 7-11). The process entails feeding a transparent film, coating a coating liquid of a resin on the surface of the transparent film to form a transparent resin layer, subjecting the transparent resin layer to rubbing treatment by the use of a rubbing roller to impart orientation property to the transparent resin layer (Column 8, lines 5-17). Subsequently, dust on the surface of the orientation layer is removed using a surface dust-removing machine (Column 8, lines 54-57). The rate of rotation of the rubbing roller can be adjusted in the range of less than 1,000 rpm. The film is moved at a constant tension and a constant rate. The outer diameter of the rubbing roller is in the range of 80-500mm. The rotation number of the rubbing roller is in the range of 500-1500 rpm and the tension in the film is in the range of 1 to 2N/1cm (film width). The rate of movement of the film is 6 to 60 m/min (Column 11, lines 1-45).

Accordingly, it would have been obvious to one having ordinary skill in the art to rub the surface of the surface layer disclosed by Murata et al. given that Suga et al. specifically disclose that subjecting a resin layer to rubbing treatment by the use of a rubbing roller imparts orientation property to the resin layer.

3. Claims 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al. (WO97/30021) in view of Suga et al. (US 5,853,801).

Yoshida et al. disclose fluorine-containing polyfunctional methacrylates composition that can be used for preparing a low refractivity material for a reflection

Art Unit: 1773

reducing film. The reflection reducing film is composed of a transparent substrate, a layer of low refractivity material having a refractive index of 1.35 to 1.49 and a material layer there between having a refractive index of 1.55 or higher.

Yoshida et al. do not specifically state that the surface their layer of low refractivity material having a refractive index of 1.35 to 1.49 or the material layer having a refractive index of 1.55 or higher is subjected to rubbing.

However, Suga et al. disclosed a process for the preparation of an optical compensatory sheet, which improves the image contrast and viewing angle of a liquid crystal display (Column 1, lines 7-11). The process entails feeding a transparent film, coating a coating liquid of a resin on the surface of the transparent film to form a transparent resin layer, subjecting the transparent resin layer to rubbing treatment by the use of a rubbing roller to impart orientation property to the transparent resin layer (Column 8, lines 5-17). Subsequently, dust on the surface of the orientation layer is removed using a surface dust-removing machine (Column 8, lines 54-57). The rate of rotation of the rubbing roller can be adjusted in the range of less than 1,000 rpm. The film is moved at a constant tension and a constant rate. The outer diameter of the rubbing roller is in the range of 80-500mm. The rotation number of the rubbing roller is in the range of 500-1500 rpm and the tension in the film is in the range of 1 to 2N/1cm (film width). The rate of movement of the film is 6 to 60 m/min (Column 11, lines 1-45).

Accordingly, it would have been obvious to one having ordinary skill in the art to rub the surface of their layer of low refractivity material having a refractive index of 1.35 to 1.49 or the material layer having a refractive index of 1.55 or higher as disclosed by

Yoshida et al. given that Suga et al. specifically disclose that subjecting a resin layer to rubbing treatment by the use of a rubbing roller imparts orientation property to the resin layer.

4. Claims 22 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (US 6,033,743) in view of Suga et al. (US 5,853,801).

Suzuki et al. disclose an antireflection film used in a liquid crystal display and comprising a transparent substrate and at least one resin layer comprising a resin composition containing ultrafine particles and a polyfunctional acrylate having three or more acryloyl groups (Column 1, lines 60-68 and Column 4, lines 35-43). Examples of the ultrafine particles include ITO and oxides of Zn, Sn and Ti (Column 6, lines 50-63).

Suzuki et al. do not specifically state that the surface their resin layer is subjected to rubbing.

However, Suga et al. disclosed a process for the preparation of an optical compensatory sheet, which improves the image contrast and viewing angle of a liquid crystal display (Column 1, lines 7-11). The process entails feeding a transparent film, coating a coating liquid of a resin on the surface of the transparent film to form a transparent resin layer, subjecting the transparent resin layer to rubbing treatment by the use of a rubbing roller to impart orientation property to the transparent resin layer (Column 8, lines 5-17). Subsequently, dust on the surface of the orientation layer is removed using a surface dust-removing machine (Column 8, lines 54-57). The rate of rotation of the rubbing roller can be adjusted in the range of less than 1,000 rpm. The

Art Unit: 1773

film is moved at a constant tension and a constant rate. The outer diameter of the rubbing roller is in the range of 80-500mm. The rotation number of the rubbing roller is in the range of 500-1500 rpm and the tension in the film is in the range of 1 to 2N/1cm (film width). The rate of movement of the film is 6 to 60 m/min (Column 11, lines 1-45).

Accordingly, it would have been obvious to one having ordinary skill in the art to rub the surface of the resin layer disclosed by Suzuki et al. given that Suga et al. specifically disclose that subjecting a resin layer to rubbing treatment by the use of a rubbing roller imparts orientation property to the resin layer.

Response to Arguments

5. Applicant's arguments with respect to the rejection of claims 19-21 under 35 U.S.C. 102(b) as being anticipated by Suga et al. (US 5,853,801) have been fully considered and are persuasive. Hence, the above-mentioned rejection is withdrawn.

Applicants traverse the rejection of claims 19-24 under 35 U.S.C. 103(a) as being unpatentable over Murata et al. (US 6,074,741) in view of Suga et al. (US 5,853,801), the rejection of claims 26 and 27 under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al. (WO97/30021) in view of Suga et al. (US 5,853,801), and the rejection of claims 22 and 25 under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (US 6,033,743) in view of Suga et al. (US 5,853,801) and submit that the Suga et al. is not properly combinable with Murata et al., Yoshida et al. or with Suzuki et al. Applicants assert that one of ordinary skill in the art would not have been motivated to rub the layers disclosed by Murata et al., Yoshida et al. or Suzuki et al. because there is no

Art Unit: 1773

motivation or suggestion to coat such layers with a discotic liquid crystalline compound.

The Examiner disagrees. Murata et al. disclose an antiglare material, suitable for use in liquid crystal displays, comprising a transparent substrate provided with a surface layer, Yoshida et al. disclose a low refractivity material for a reflection reducing film wherein the reflection reducing film is composed of a transparent substrate, a layer of low refractivity material having a refractive index of 1.35 to 1.49 and Suzuki et al. disclose an antireflection film used in a liquid crystal display and comprising a transparent substrate and at least one resin layer. Hence, it would have been obvious to one having ordinary skill in the art to rub the surface of the resin layer disclosed by Murata et al., Yoshida et al. or Suzuki et al. given that Suga et al. specifically disclose that subjecting a resin layer to rubbing treatment by the use of a rubbing roller imparts orientation property to the resin layer.

Allowable Subject Matter

6. Claims 28-32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

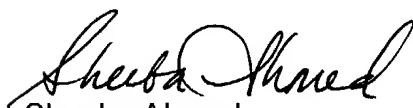
Art Unit: 1773

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheeba Ahmed whose telephone number is (571)272-1504. The examiner can normally be reached on Mondays and Thursdays from 8am to 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on (571)272-1516. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sheeba Ahmed
Art Unit 1773
April 18, 2004